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12. Justification (Reason for Modification EJO # TP # etc.)

The objective of this project is to characterize materials located in the trenches, including buried metal containers (i.e., drums). The potential presence of buried metal should be investigated and is not a reason for relocation of the borings.

**OU 2 Temporary Limited Scope Expires July 31, 1995**

[illegible]

REVIEWED FOR CLASSIFICATION / UCMJ  
BY \_\_\_\_\_  
DATE \_\_\_\_\_

## ADMIN RECORD

## BOREHOLE CLEARING

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## BOREHOLE CLEARING

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Drilling locations with anomalous values will require moving the location to the nearest "clear" area. By using the above procedures, determine an area within 50 feet of the original drilling location that is free of anomalies. Mark the new drilling location with a wood stake and document the new location on Form GT 10A. Notify the project site manager of the new location. For the OU-2 Trenches and Mound Site Characterization Program, direct push locations will be moved a maximum of 5 feet away from an anomaly.

For larger areas or for locating buried trenches or pits, follow a surveyed grid pattern when traversing with the EM instrument. If the grid is not surveyed prior to the EM traverse, place a wood stake marker at the end of each traverse and document the marker location on the field data record (Form GT 10A). All EM traverses should be documented on a field map during the survey. For larger areas, a portable computer may be required to quickly analyze the data and facilitate the location of additional survey lines.

### 5.3 MAGNETIC LOCATOR

A magnetic locator detects magnetic fields associated with certain objects. The depth of investigation depends on the size of the object. The Schonstedt magnetic locator, for example, can detect well casings up to 15 feet deep, however, a 1 1/4-inch nail can be detected only to a depth of 8 inches.

A magnetic locator responds to the magnetic gradient between two magnetic field sensors (A and B). If no anomalies exist, the magnetic field between sensors A and B is balanced, and a 40 Hz frequency signal is heard on the magnetic locator's audio output. This frequency output (40 Hz) is the ambient magnetic field of the earth. However, when the magnetic field becomes stronger at sensor A (located at the bottom of the locator) than at sensor B, the output signal increases in frequency. When the tip of the locator is directly over the ferrous object, the audio signal increases to its highest frequency.

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### 5 5 DATA ANALYSIS

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When the anticipated hazards are isolated pieces of metal, borehole locations will be cleared to a minimum of 6 feet around the drilling location stake. In these cases, data will not be retained for later analysis, but the results will be documented on Form GT 10A. If an anomalous area within 6 feet of the borehole location stake is identified, the borehole location will be changed to an anomaly-free area within 50 feet of the original borehole location to minimize the possibility of contact with any anomalous material below the surface. For the OU-2 Trenches and Mound Site Characterization Program, direct push locations will be moved a maximum of 5 feet away from an anomaly.

When the hazard is buried trenches or pits, larger areas will have to be geophysically surveyed to clear borehole locations. In these cases, electromagnetic data will be collected with a digital data logger. The data will be transferred to a personal computer for analysis. Adjustments to the boring location (if required) will be made after the data are analyzed and interpreted.

In both of the above cases, Form GT 10A will be used to document the procedures and reasoning for the relocation or approval of a borehole location.

At all times, geophysical data will be collected and interpreted in a conservative and prudent manner. Additionally, appropriate levels of caution will be exercised by all field crews involved in intrusive activities, even on geophysically "cleared" boring locations.

### 6 0 ADMINISTRATIVE BOREHOLE CLEARANCE

Administrative borehole clearance will be required for drilling operations at the RFP and will consist of excavation authorization. Copies of the required forms are included in Section 7 0, Documentation.